STUDENT ENROLLMENT IN FACULTIES IN CANADA OF AGRICULTURE

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Abstract

Reports on student enrollment in Faculties of Agriculture in Canada have been printed in the NACTA Journal since 1973. More recently the Association of Faculties of Agriculture in Canada has been publishing enrollment data plus data on the number of graduates at the bachelor's, M.Sc., and Ph.D. levels on an annual basis.

Canadian faculties of agriculture are going through enrollment patterns similar to those presently being observed in the United States. Declines at the bachelor's level and modest increases in the graduate level have been the trend in both countries since 1978.

Enrollment in Canadian faculties of Agriculture has been reported in the **NACTA Journal** on an annual basis and was summarized for the 1977 to 1980 period in the **Journal** in March 1981 (1). The Association of Faculties of Agriculture in Canada (AFAC) plans to continue an active program of data collection as enrollment concerns in agricutlure, at both the undergraduate and graduate levels, become more pronounced.

This report covers the 4-year period from 1978 to 1981 inclusive and provides additional data on the number of graduates annually in various disciplines. The data reported herein for 1978, 1979, and 1980 differ slightly from the data reported previously (1) due to slight variations in the time of collection and the inclusion or exclusion of some academic programs such as forestry. All data reported in the AFAC format is circa October 1, plus or minus ten days.

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Enrollment at the three veterinary colleges offering the D.V.M. degree has remained unchanged from 1977 through 1981 and approximates 1000 students in total and 240 graduates annually.

In general, student enrollment patterns in agricultural faculties in Canada are similar to those reported in the United States (4). A more detailed analysis is provided for the various educational levels with additional data on the number of graduates.

Undergraduate Enrollment

Undergraduate enrollment in agriculture degree programs peaked in 1978 and 1979 following substantial growth in the early and mid parts of the decade. In 1980 enrollment began to decline (5 percent) with a further decline of similar magnitude in 1981 (Table 1). Enrollment in agriculture programs in 1981 stood at 91 percent of the level achieved only 3 years earlier - an average decline of 3 percent per year. Most faculties experienced some decline with the largest proportions occurring at Laval University, the Ontario Agricultural College, and the University of Alberta. Further declines are projected over the next several years as the number of high school graduates decline even further. Most faculties are now more active in student recruitment with the goal of at least slowing the projected decline and, hopefully, maintaining present enrollment levels.

The increase in the proportion of women entering faculties of agriculture appears to be leveling off at the 35 to 40 percent mark. It is an interesting exercise to go back through your own enrollment data throughout the 1970's and calculate the rate of growth for males as compared with females. In some colleges almost all of the total enrollment increase during that decade was in female students and, in some instances, the number of males actually declined from 1970 to 1980! Clearly our enrollment growth of the early and mid 1970's was sustained primarily by women.

Table 1. Undergraduate Enrollment Canadian Faculties of Agriculture 1978 - 1981

	4-YR DEGREE				2-YR DIPLOMA			
	1978	1979	1980	1981	1978	1979	1980	1981
Nova Scotia Agricultural College	197	173	178	181	250	280	280	259
Laval University	968	990	905	803				
Macdonald College (all programs)	728	806	650	677	96	100	90	103
B.Sc. (Agr.) only	493	539	527	532				
Ontario Agricultural College (all programs)	1983	2037	1998	1930	336	351	394	416
B.Sc. (Agr.) only	1534	1502	1527	1394				
University of Manitoba	688	592	596	560	265	259	245	245
Univesity of Saskatchewan	488	501	509	511	282	242	240	264
University of Alberta (all programs)	533	534	504	445				
B.Sc. (Agr.) only	467	468	434	379				
University of British Columbia	398	415	428	393				
Total (all programs)	5983	6048	5768	5500	1229	1232	1249	1287
(B.Sc. (Agr.) only)	5233	5180	5104	4753				

Date: circa October 1 each year

Note: Laval excludes students in Home Economics; Alberta excludes students in Forestry; O.A.C. includes Food Science, Engineering and Landscape Architecture; Macdonald includes Engineering and Food Science.

Table 2. Number of Graduates - Faculties of Agriculture in Canada B.Sc. (Agr.) Level

	1977-78	1978-79	1979-80	1980-81
Animal Science	275	300	273	275
Plant Science	282	274	259	279
Agricultural Economics	168	160	172	183
Food Science	139	109	118	113
Engineering	103	104	127	151
Other	178	241	281	310
Total	1145	1188	1230	1311
% Female	26	31	32	34

Enrollment in diploma (2 year) programs has remained fairly constant over the 1978 to 1981 period. Significant growth occurred at the Ontario Agricultural College due to a relaxation of enrollment restrictions on the number of freshmen students accepted to the program and a policy of accepting more of the qualified applicants. Total growth over the 4 year period approximated 5 percent.

Bachelor's Graduates

The AFAC data (2) provide a review of the number of graduates in various disciplines in agriculture. From 1977-78 to 1980-81 the number of graduates increased 15 percent, reflecting the increases in freshmen enrollment from 1974 to 1977 (Table 2). Areas of greatest increase on a proportionate basis are in engineering and in the "other" category which includes agricultural biology, entomology, resources management and plant protection. The proportion of women graduates increased significantly and accounts for 147 graduates of the total increase of 166 students, further evidence of the degree to which female students caused the increases in student enrollment in the mid 1970's.

Graduate Enrollment

Table 3 shows the graduate enrollment in faculties of agriculture from 1977 to 1981 by combining the data as reported in the **NACTA Journal** (1) and the AFAC report (2) for 1981. Enrollment growth has been slow with relatively little change over the 5 year period. Total growth from 1977 to 1981 was about 3 percent. A study done under the auspices of AFAC has been completed (3) and projects a deficiency of Ph.D. graduates in agriculture in Canada over the next 5 to 10 years. In the initial period through to 1986 the calculated demand for Ph.D.'s in agriculture is in excess of 100 annually, whereas the present supply is less than half that level!

Table 4 shows the number of graduates from M.Sc. and Ph.D. programs for 1979-80 and 1980-81. The number of Ph.D. graduates increased from 58 to 68 from 1979-80 to 1980-81. Further increases are necessary over the next five years if existing researchers in Agriculture Canada and in the faculties are to be replaced. The number of M.Sc. graduates did not change significantly over the two year period.

At this point many agencies and employers of Ph.D. graduates in agriculture are becoming increasingly concerned at the present and projected future shortages of highly qualified manpower in agriculture. Some innovative policies and programming are required if the shortage is to be alleviated.

Table 4. M.Sc. and Ph.D. Graduates Canadian Faculties of Agriculture 1979-80 to 1980-81.

	1979-80		1980-81	
	M.Sc.	Ph.D.	M.Sc.	Ph.D.
Laval University	32	1	24	1
Macdonald College	31	10	22	11
Ontario Agricultural College	87	14	92	19
University of Manitoba	40	13	40	13
University of Saskatchewan	18	7	18	10
University of Alberta	25	6	31	7
University of British Columbia	16	7	24	7
Total	249	58	241	68

Summary

A critical shortage of Ph.D. graduates in Canada continues to exist even with recent increases in the number of graduates from the faculties of agriculture. Graduate enrollment is increasing, but not at a rate that will fulfill the demand.

Undergraduate enrollment has declined since its peak in 1979 and now stands at 91 percent of that year. Further declines are likely although the faculties are working hard to offset the decline.

References

1. Jenkinson, G. M. March 1981. Canadian Enrollment, Agriculture and Veterinary Medicine - 1980. **NACTA Journal** 25:1.

2. Association of Faculties of Agriculture in Canada Enrollment Data, October 1981. Compiled by G. Laliberte; unpublished report.

3. B. D. Kay. 1981. Association of Faculties of Agriculture in Canada Report on Graduate Enrollment.

Table 3. Graduate Enrollment Canadian Faculties of Agriculture - September 1977 - 1981

	1977		1978		1979		1980		1981	
	M.Sc.	Ph.D.	M.Sc.	Ph.D.	M.Sc.	Ph.D.	M.Sc.	Ph.D.	M.Sc.	Ph.D.
Laval University	94	11	105	12	119	16	121	23	123	27
Macdonald College	141	64	124	70	95	81	119	62	126	63
Ontario Agricultural College	239	65	242	73	257	65	284	70	303	77
University of Manitoba	165	70	164	65	168	62	166	54	159	54
University of Saskatchewan	88	34	74	38	67	40	68	35	79	36
University of Alberta	143	51	136	42	131	48	118	46	113	49
University of British Columbia	92	41	101	45	112	57	112	57	105	52
Total	962	336	946	345	949	369	988	347	1008	358

Data obtained from that submitted to the annual meetings of the Deans of Agriculture and Veterinary Medicine. All data taken from September registration figures, full-time, and part-time students.